



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

AUG 25 1995

HSE-5J

MEMORANDUM

DATE:

SUBJECT: ACTION MEMORANDUM - Request for an Emergency Removal Action and a Time Critical Removal Action at the Terry Residence, Lemont, Cook County, Illinois

FROM: Fred Bartman, On Scene Coordinator
Emergency Response Section II

THRU: Rick Karl, Chief
Emergency and Enforcement Response Branch

TO: William E. Muno, Acting Director
Office of Superfund

Site ID# : 4K

I. PURPOSE

The purpose of this Action Memorandum is to request that you affirm the verbal approval of funds in the amount of \$ 80,000 for expenses generated for an emergency removal action and to request your approval of an additional \$216,000 to conduct a time critical removal action at the Terry Residence (TR) site in Lemont, Cook County, Illinois. Verbal approval was obtained from the Chief of the Emergency and Enforcement Response Branch for the emergency action conducted under the Emergency Response Contract Services (ERCS) on July 26, 1995 and an additional \$30,000 was verbally authorized by the Director of the Office of Superfund on August 8, 1995. An emergency action was necessary to abate an immediate threat to public health and the environment due to the storage of incompatible, reactive and poisonous chemicals in a unsecured abandoned laboratory in a private residence in the center of the City of Lemont. The emergency action included securing the site, and the identification and segregation of incompatible chemicals. A time critical removal action is necessary to dispose of the chemicals and decontaminate the residence.

The site is not on the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID# IL0001139252

1. Removal Site Evaluation

The City of Lemont Fire District responded to a call from local police and building inspectors who discovered hazardous chemicals while inspecting a home for building code violations.

The home is located [REDACTED] ^{not responsive} in Lemont, Illinois (Figure 1) and is currently owned by Lewis I. Terry. The home is very old and in disrepair. The home is in a residential area and is located near downtown Lemont (population 10,000).

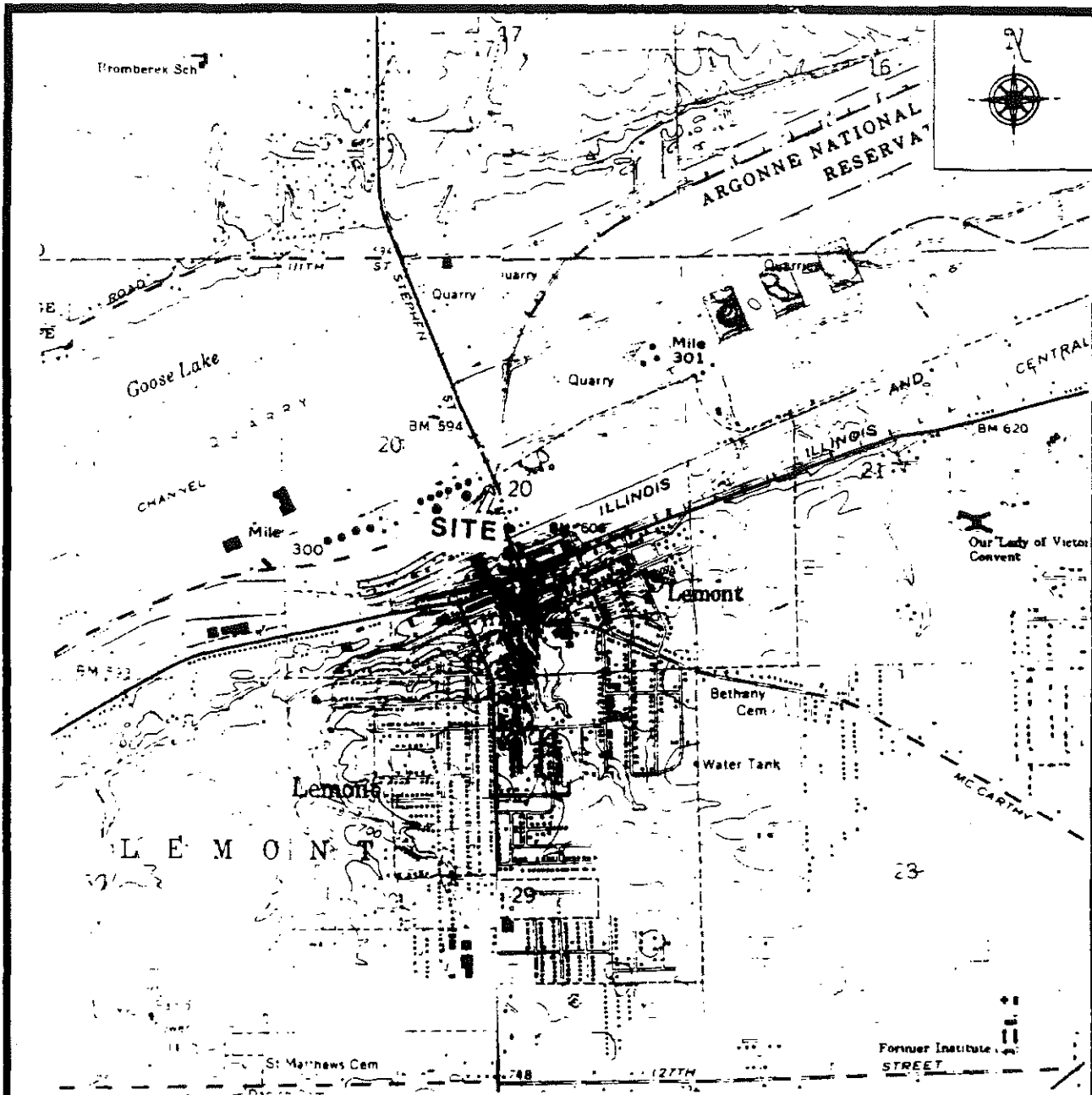
According to Mr. Terry, the majority of the chemicals were used to manufacture thiophosgene which was subsequently sold to other labs. Labs used it as organic intermediary to make other chemicals. Mr. Terry's laboratory has been idle since the early 1970's. Other bottles of chemicals were purchased and are currently stored inside the house. The contents of these bottles are unknown.

Chemicals used to manufacture thiophosgene include stannous chloride, stannic chloride, hydrochloric acid, and perchloromethyl mercaptan.

According to Mr. Terry, there are small quantities of pure thiophosgene (two ounces) and perchloromethyl mercaptan (a few small bottles) currently stored in the house. The exact whereabouts of all of the thiophosgene and perchloromethyl mercaptan were unknown. Water was added to some of the jars of perchloromethyl mercaptan to keep the odors under control. The equipment used to recover thiophosgene was also still intact. The majority of the bottles (approximately 150 one gallon glass bottles) contained a solution of stannic chloride, stannous chloride and hydrochloric acid solution. There was also reportedly two 35 gallon rubber kegs of solution. The solution may also include a thiophosgene residue. Some of the other unknown chemicals could be flammable and may include toluene and methyl chloride.

The City of Lemont subsequently boarded the entry ways of the house and shut off utilities. The City contacted the Illinois Environmental Protection Agency (IEPA) and other agencies. The IEPA subsequently referred the situation to the USEPA on July 26, 1995.

OSC's Steve Faryan and Fred Bartman and members of the Technical Assistance Team (TAT) mobilized to the Terry residence on July 26, 1995. OSC Faryan and TAT members observed approximately 600 containers of chemicals primarily located in the basement. Many of the containers were one gallon in size and appeared to contain a clear to brownish liquid with varying amounts of crystals and a distinct red and/or white liquid. Some of bottles also appeared to



Illinois



Quadrangle Location.

EPA U.S. EPA Region 5
IDENTIFICATION AND ENFORCEMENT RESPONSE BRANCH

TITLE	Site Location Map	FIGURE #	1
SITE	Lewis Terry Residence	SCALE	1:24000
CITY	Lemont	STATE	Illinois
SOURCE	USGS Topographical Map, Sag Bridge, Illinois Quadrangle	PAN	T05-9507-012
		DATE	1963
		REVISED	1973

have spilled or broken apart and walls, floors, shelves and utilities also appeared to be damaged due to chemical exposure.

Verbal authorization was obtained from Rick Karl, Chief of the Emergency and Enforcement Response Branch to activate the Emergency Response Contractor Service (ERCS) to spend up to \$50,000 on July 26, 1995. This authorization was based in part upon information provided by Mr. Terry and the nature of the chemicals stored in the Terry residence. OHM Environmental Services mobilized to the site later that evening.

After obtaining verbal authorization for access from Mr. Terry, OHM conducted a site reconnaissance and the area was secured by installing a fence and posting signs by July 28, 1995. A mobile lab and associated equipment and personnel were authorized for delivery on July 31, 1995.

Mr. Terry was notified of his potential liability under CERCLA by letter dated July 27, 1995. The letter was hand delivered by OSC Bartman.

Mr. Terry denied USEPA access on July 27, 1995 pending legal counsel. Permission to secure the site was obtained by legal counsel later that evening. Verbal permission for access for the full removal was obtained on July 28, 1995.

Preliminary results from the mobile laboratory indicate that the majority of the bottles contain a mixture of hydrochloric acid and Tin Chloride (Tin Solution). Some of the Tin Solution contains a distinct organic layer containing carbon disulfide which is highly flammable.

Other hazards identified include a base cyanide, nitric acid, sulfuric acid, peroxide and an unknown organic oxidizer. The unknown organic oxidizer is presumed to be perchloromethyl mercaptan. All these chemicals could violently react with the Tin Solution and result in a fire and/or generate a lethal toxic gas. Lethal gases that could be released are hydrogen cyanide and phosgene.

Approximately sixteen ounces of a dark purple/reddish liquid was discovered in a reaction vessel used to manufacture thiophosgene.

Incompatible chemicals were segregated and lab packed in a secure area pending disposal. Several small containers (8 ounce) of unknown contents could not be remotely opened onsite and remain unidentified. These bottles are also currently staged in a secure area. An offsite remote location will be necessary to help identify the hazards and arrange for disposal.

B. Other Actions to Date

1. Previous Actions

An emergency action was initiated on July 26, 1995. The majority of the chemicals have been identified and segregated. The Lemont Township Hazmat Team was also mobilized on July 26, 1995 and provided backup to USEPA during site reconnaissance. The City of Lemont has notified Mr. Terry of several building code violations and he cannot reoccupy the house until the house passes inspection.

2. Current Actions

The USEPA is in the process of arranging for disposal and searching for a remote location to deal with the unknown bottles.

C. State and Local Authorities Role

1. State and Local Actions to Date

On July 26, 1995, the City of Lemont and the State of Illinois verbally requested USEPA assistance. The City of Lemont has provided backup and advice during the emergency action.

Potential for Continued State/Local Response

The IEPA/City of Lemont will continue to assist USEPA during the course of this removal action. It is unlikely that the State of Illinois or Lemont Township will contribute funding towards the removal for this site.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Current and past conditions at the TR site present an imminent and substantial threat to human health and the environment, and meet the criteria for a removal action as stated in the National Contingency Plan (NCP), Section 300.145, Paragraph (b) (2), specifically:

- a) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.

Thiophosgene is a red liquid and considered poisonous through ingestion and skin absorption.

Perchloromethyl mercaptan is a yellow oily liquid and is also considered a poison. It is toxic by inhalation and skin absorption. Short exposure to small quantities may cause death or permanent injury. Inhalation may cause severe irritation of the upper respiratory tract. It is also a strong irritant to the eyes and

skin. Brief exposure to lower concentrations may produce central nervous system depression and lung, liver and heart congestion. Severe exposure may be fatal. Exposure to eyes may lead to severe conjunctivitis or corneal damage.

Lethal gases may potentially form in the event of a fire involving thiophosgene and Perchloromethyl mercaptan. These gases may include phosgene gas, hydrogen chloride, sulphur dioxide, carbon disulfide and carbon tetrachloride.

Phosgene gas or mustard gas is a nerve agent used in warfare. Phosgene is a strong lung irritant and causes severe damage to the alveoli of the lungs. This is followed by edema resulting in asphyxiation. An atmosphere containing 20 ppm may cause lung injuries.

Hydrogen Chloride gas causes irritation of the upper respiratory tract; a concentration of less than 35 ppm causes irritation of the throat. More severe exposures result in pulmonary edema. Concentrations 1300-2000 ppm in air are lethal to humans by brief exposure (up to a few minutes).

Stannic chloride is also considered poisonous and may violently react with water. It is toxic if inhaled or swallowed. Contact causes severe burns to skin and eyes. The heat of reaction could ignite other combustible materials (paper, wood, oil etc..). Flammable/poisonous gases may also accumulate. Runoff from fire fighting may create a fire or explosion hazard.

Stannous chloride is a crystalline mass or flaky solid. Contact causes burns to skin and eyes. If inhaled, it maybe harmful. Fire may produce irritating or poisonous gases. Stannous chloride is a powerful reducing agent and reacts violently with oxidizers. The heat of reaction could potentially ignite other combustible material.

Other hazards identified include a base cyanide, nitric acid, sulfuric acid, peroxide and an unknown organic oxidizer. The unknown organic oxidizer is presumed to be perchloromethyl mercaptan. All these chemicals could violently react with the Tin Solution and result in a fire and/or generate a lethal toxic gas. Lethal gases that could be released are hydrogen cyanide and phosgene.

Hydrogen Cyanide is a protoplasmic poison. Exposure to Hydrogen Cyanide gas above 270 ppm is immediately fatal.

Excessive chemicals stored in Mr. Terry's abandoned laboratory are poisonous, highly reactive, and may form lethal gas in the event of a fire. When the chemicals were first discovered by the City, police officers and a building inspector reportedly became ill after entering the basement of the Terry residence.

The home is very old and in disrepair. The City of Lemont currently has cited Mr. Terry for various code violations including exposed wiring, improper grounding and overloaded circuits. A City worker who replaced a water meter inside the Terry residence was shocked by a bare live wire hanging from the ceiling. The home will also be cited for plumbing code violations including leaking tap water and hot water heat pipes. Some of the chemicals may violently react with water or oxidizers which could easily start a fire. The furnace/boiler and hot water heater are also very old and appear to be corroded in part to the corrosive nature of the chemicals. The Terry residence is clearly a fire hazard.

In the event of a fire and/or reaction, a poisonous/toxic and potentially lethal cloud of gas would be generated and drift over the City of Lemont. Gases that could be generated include phosgene, a nerve agent used mainly in World War I, hydrogen cyanide and chlorine gas. The home is located in a residential area near downtown Lemont. Due to the nature of the chemicals involved (toxic, flammable, reactive, corrosive) and the dilapidated and hazardous condition of the home and laboratory, the Terry residence clearly poses an imminent and substantial public health threat to the City of Lemont.

b) fire and explosion hazard

A fire and explosion could occur because the chemicals stored in the Terry residence are incompatible and may be water reactive. The chemicals may violently react with each other and water. The heat from a fire could trigger violent explosions of the tin chloride, carbon disulfide and other flammable material. Runoff from fire fighting may also create a fire and explosion hazard in neighboring homes and sewers.

IV. ENDANGERMENT DETERMINATION

Actual or potential releases of hazardous substances from this site as described in Sections II and III above, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health or welfare or the environment.

V. PROPOSED ACTION AND ESTIMATED COSTS

A. Proposed Action

1. Proposed Action Description

The time critical removal action will be comprised of the following actions:

- 1) Develop and implement a site safety plan
- 2) Secure the site
- 3) Dispose of chemicals, hazardous debris and decon water in accordance with the USEPA offsite rule (58 C.F.R. 49200)
- 4) Decontamination of building structures clearly impacted by the chemicals
- 5) Additional sampling to evaluate removal of contaminated soil in crawl space, water currently stored in a cistern and other areas of the residence.
- 6) Identify a remote location to deal with unknown bottles and arrange for disposal.

The response actions described in this memorandum directly address actual or threatened releases of hazardous substances, pollutants or contaminants at the facility which may pose an imminent and substantial endangerment to public health and safety and the environment. These response actions do not pose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

2. Contribution to Remedial Performance

The proposed action will remove all hazardous substances. This action will eliminate threats posed by exposure to hazardous substances found on site and a fire and explosion hazard.

3. Description of Alternative Technologies

Onsite treatment of hazardous substances found at the site is not cost effective or practical because of the small quantity of waste. The additional start up and equipment costs would not be offset by transportation and disposal savings.

4. Applicable or Relevant and Appropriate Requirements (ARARs)

Federal ARARs determined to be applicable to the site are the Resource Conservation and Recovery Act (RCRA) requirements relating to handling and disposal of the waste. All ARARs of federal law will be complied with to the extent practicable. A letter has been sent to IEPA requesting that they identify state ARARs. Any state ARARs identified in a timely manner for this action will be complied with to the extent practicable.

5. Project Schedule

The removal action is expected to take approximately twenty work days to complete.

6. Post Removal Site Control

Completion of removal activities at the TR site may eliminate threats to public health and any need for onsite post removal site

controls. Pending confirmation sampling, post removal site controls will be investigated.

B. Estimated Costs

The estimated total cost for the emergency response as of August 11, 1995 was \$80,000 of which \$63,000 was used towards Emergency Response Cleanup (ERCs) contractors. The total estimated cost associated with the remaining activity is \$213,742 of which \$164,835 could be used towards ERCs. Consequently the total ERCs estimate is \$228,000 and is expected to take twenty work days to complete. The overall total cost estimate including the emergency response is \$296,100. The detailed Emergency Response Cleanup Service (ERCs) contractor costs and Initial Cost Projection of the remaining work are presented in Attachment 1. The Total Removal Project Ceiling Cost Estimate work is presented in Table 1.

Cost estimates assume that all material will need to be incinerated. Other less costly treatment options will also be explored including neutralization of the tin chloride solution and may significantly reduce removal costs.

TABLE 1
TERRY RESIDENCE

REMOVAL PROJECT CEILING ESTIMATE

EXTRAMURAL COSTS:

ERCS Contractor

Personnel	\$ 16,054
Equipment	\$ 4,002
Transportation & Disposal	\$ 102,000

Subtotal	\$ 122,100
----------	------------

20% Extramural Contingency	\$ 24,420
----------------------------	-----------

Subtotal	\$ 146,520
----------	------------

15% Project Contingency	<u>\$ 18,315</u>
-------------------------	------------------

EXTRAMURAL SUBTOTAL	\$ 164,835
---------------------	------------

INTRAMURAL COSTS:

U.S. EPA Direct Costs [\$30 x (250 Regional Hrs. + 25 HQ Hrs.)]	\$ 8,250
--	----------

U.S. EPA Indirect Costs (\$53 x 250 Regional Hrs.)	<u>\$ 14,575</u>
---	------------------

TAT Cost	\$ 21,753
INTRAMURAL SUBTOTAL	\$ 44,578

15% Project Contingency	\$ 6,686
-------------------------	----------

TOTAL INTRAMURAL COST	\$ 51,265
-----------------------	-----------

TOTAL REMOVAL PROJECT CEILING INCREASE:	\$ 216,100
---	------------

FUNDS EXPENDED UNDER EMERGENCY ACTION:	\$80,000
--	----------

TOTAL PROJECT CEILING:	\$ 296,100
------------------------	------------

VI. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Should the above action be delayed or not taken, residents of Lemont may potentially be exposed to hazardous substances. Further offsite migration may occur. The TR site will continue to be a public health threat.

VII. OUTSTANDING POLICY ISSUES

None

VIII. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this site is contained in an Enforcement Confidential Addendum (Attachment 2).

IX. RECOMMENDATION

This decision document represents the selected removal action for the Terry Residence Site (TR) site in Lemont, Cook County, Illinois developed in accordance with CERCLA as amended and is not inconsistent with the National Contingency Plan. This decision is based on the Administrative Record for the site (Attachment 3). Conditions at the site meet the NCP section 300.415 (b)(2) criteria for a removal and I recommend your approval of the proposed removal action. The total project ceiling, if approved, will be \$296,100, of which \$228,000 may be used for cleanup contractor costs. You may indicate your decision by signing below.

APPROVE:

Acting Director, Office of Superfund

DATE: 5/21/75

DISAPPROVE:

Acting Director, Office of Superfund

DATE: _____

Attachments

cc: T. Johnson, OS-210
Don Henne, Regional Environmental Officer
U.S. Department of Interior, Room 217
200 Chestnut Street, Philadelphia, PA 19106
B. Everett, IEPA

bcc: R. Karl, HSE-5J
D. Bruce, HSE-5J
T. Lesser, P-19J
S. Vega, MSE-5J
D. Crume, MF-10J
EERB Read File (M. Johnson)
EERB Delivery Order File (M.E. Gustafson)
EERB Site File (SF Central File Room)
William Massie, Contracting Officer, MC10-J
Fred Bartman, On Scene Coordinator
T. Krueger, ORC
L. Beasley, HSE-5J
L. Fabinski, ATSDR
M. King, Lemont Township Fire Protection District
S. Jones, City of Lemont

ATTACHMENT I

COST SUMMARY

"Contractor Costs" redacted - not relevant to the selection of the removal action.

Government
Personnel by CLIN

Page: 1

Projection Name: Lewis Terry Residenc
Projection Type: Ongoing

Date: 08/06/95

CLIN	Job Description	Ctr. Code	Regular Hrs/Day	O.T. Hrs/Day	Regular Rate	O.T. Rate	Qty	No. of Days	Task Code	Task Description	Projected Cost	Total Cost
S1-05-01	On Scene Coordinator	BPA	8.0	2.0	30.00	30.00	1	25	03	Disposal	20775	10775
S4-07-01	Chemist / QA/QC	TAT	8.0	3.0	35.00	35.00	1	25	03	Disposal	21753	21753
(Personnel Totals:)											42,528	42,528

(Including Site Contingency:15.00%)

48,907

ATTACHMENT II

ENFORCEMENT ADDENDUM

Redacted - not relevant to the selection of the removal action.

ATTACHMENT III
U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
TERRY RESIDENCE SITE

LEMONT, ILLINOIS

August 25, 1995

<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
07/31/95	Lehr, J., Lemont Bureau of Fire Prevention	Bartman, F., U.S. EPA	Letter re: Fire Code Violations at Building on Stephen Street	2
08/07/95	Bartman, F., U.S. EPA	U.S. EPA	Pollution Report #1	3
08/10/95	Newling, L., Village of Lemont, Bldg. Inspector	Terry, L.	Letter re: Preliminary Notification of Building Code Violations	5
00/00/00	Braker, W., et al		Effects of Exposure to Toxic Gases-- First Aid and Medical Treatment	90
00/00/00	U.S. EPA	U.S. EPA	Action Memorandum (Pending)	

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
TERRY RESIDENCE SITE
LEMONT, ILLINOIS

ORIGINAL
AUGUST 25, 1995

<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
07/31/95	Lehr, J., Lemont Bureau of Fire Prevention	Bartman, F., U.S. EPA	Letter re: Fire Code Violations at the Terry Residence	2
08/07/95	Bartman, F., U.S. EPA	U.S. EPA	Pollution Report #1	3
08/10/95	Newling, L., Village of Lemont, Bldg. Inspector	Terry, L., U.S. EPA	Letter re: Preliminary Notification of Building Code Violations	5
00/00/00	Braker, W., et al		Effects of Exposure to Toxic Gases-- First Aid and Medical Treatment	90
08/25/95	Bartman, F., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Request for an Emergency Removal Action and a Time Critical Removal Action at the Terry Residence, Lemont, Illinois	16